Work Ord <i>April 11, 2013</i>			•	*99	551*					Paş
Item ID: Revision ID: Item Name:	D2965 Cap, 105 Ski	ination of the second s	- 	Accept	*N900	<u>1040</u>	100*	Setup	Start Stop	*NS1*
Start Date: Required Date: Reference:	4/11/13 : 4/26/13	Start Qty: 30.00 Req'd Qty: 30.00	*30* *30*		Cust Item Customer					IV. 37
Approvals:	Process Pl	lan: CX	Date: 13/04/	Tooling: SPC (Y/N)		Date:	-	Run	Start Stop	*NR1 ³
Seque Work Ce		eration sescription vision Nbr		ea. Hoe.s	ion fr	₹90c#	An Acr			lojen lasp. Kamber Jamp
D2965		v B								
*100 *100* Purchasing Purchasing		PURCHASING Memo Issue P/O: \(\) Required	959]_Cast per Dw	0.00 0.00 g D2965Material Relea	se Note			K	13/0	9/16 3
*110 *110* Packaging Packaging		Receive & Inspect for Dan Memo Ensure Mater	nage & Mat'l Certs ial Release Note is attacl	0.00 0.00				/-	/3/2	1/3 (3.
120 *120* QC Quality Control		QC6- Inspect dimensions Memo	to drawing	0.00	-		38 co.:	£	··· · · · · · · · · · · · · · · · · ·	

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	"1							DQA:	Date	:
NCR: Y	es / No			WORK ORDER NON-O	CONFOR	MANCE / UPDA		A Glosed:	Date	:
Work Order	· · · · · · · · · · · · · · · · · · ·			DISPOSITION	,		AGAINST DEPA			and a graph of the sales, a page of the solutions of the sales of the
Part No	0.			 Rework Scrap Use-as-is Work Order Update	4 I	Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite	4	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root Cause	Date	Step	Qty	ption of work order update or Non-conformance	Initial Chief Eng	Actio Descrip		Sign & Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved										
······································					AULT CATE	GORY				
Ländin	Bending Centre No Cracks Crushed/ Cuffs Heat Trea Inspectio Ripples in	Crimped at n Strip in n Bend	Tube	General Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes	Instruc Mainto Mislabo Misrea Offset	tion Incomplete tions Incomplete/Un enance eled d	clear F	Dvalized Dvart Incorre Part Lost/M Part Moved Positioned V Power Loss,	ct issing Wrong	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other
Torque Waves in Extrusion Drawing Turning Sequence Finish Wave/Twist in Tube Folio				Out of	Calibration Sequence e Dimensions	<u></u>				

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

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												DQA:	Date	e:	
NCR: Y	es /	No				WORK ORDER NON-C	ONF	ORN	MANCE / UPDA		QA (Glosed:	Date	<u></u>	
	·		· ,			DISPOSITION				AGAINST DE		PROCESS			
Work Orde	er:					Rework	1	Skid-tube Crosstube					Water Jet	Engineer	ing
Part N	١٥					Scrap Use-as-is	,	Machining Small Fab					d. Eng. Coor. e/Packaging	Qua	-
NCR N	No			·		Work Order Update	Large Fab Composite					60,3101	Supplier		
Root					Descri	ption of work order update	Init	tial	Actio	n	Si	gn &			· · · · · · · · · · · · · · · · · · ·
Cause	0	ate	Step	Qty		or Non-conformance	Chief	f Eng	Descrip	tion	1	pate	Verification	QC Ins	pector
Doc/Data															
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Setup								ł							
Other									•						
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	_	nding				Bend	\vdash	rain	•	<u> </u>	- 1	lized	<u> </u>	—	
			t Concer	ntric to	o/s	BOM/Route	—	ardwa		· }-	4 ľ	•	tolerance	Temperatu Weld	re/Cure
	Cra				.	Broken/Damaged	-		on Incomplete	<u> </u>	- 1	t Incorre	<u>+</u>	Wrong Sto	-k Dullad
	_		crimped.		<u> </u> -	Burrs	-		ions Incomplete/Un	clear	4 1	t Lost/Mi	issing [wrong stor	.k Pulleu
•	Cuf			Contamination					nance		- 1	t Moved itioned V	Mrong		
	Heat Treat Countersink											Other			
Inspection Strip in Tube Cut Too Short															
Ripples in Bend Drill Holes					\vdash	ffset	Soft out of		+	<u> </u>					
1	Torque Waves in Extrusion Drawing						1 10	ut of (Calibration		- 1				

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Finish -

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Order ID 99551 April 11, 2013 11:51:30 AM					Page 3						
Revision ID:	D2965 Cap, 105	Skidtube		Accept	*N90	00401 0	ገበ*	Setup	Start Stop	*NS	• •
Start Date: Required Date: Reference:	4/11/13 4/26/13	Start Qty: 30.00 Req'd Qty: 30.00	*30* *30*		Cust Iter						
Approvals:	Process QC:	Plan:	Date:	Tooling: SPC (Y/N):		Date:		Run	Start Stop	*NF	R1* R2*
Sequera (1)/ Work Center IE 160 *160*)	peration cescription QC3- Inspect Part Finish		Yet Up/ Run Hours 0.00	The state of the s	Tool # Pla Co	de Qty	Qty	/ N	Number	Insp. Stamp
QC Quality Control		Memo		0.00				·	-	JU	13/05/30
170		HandFinishing		0.00			38	· · (W	_13/05/30
HandFinish Hand Finishing		Memo Install Inserts	as per Dwg D2965	0.00					Ť	; (
180 *180* QC		QC5- Inspect part complet	eness to step on W/O	0.00			38	4	5	13-5-	20. Cotto

Memo

120

Quality Control

											DQA:	Date:	
NCR: Yes	/ No	_			WORK ORDER NON-O	CONF	FORN	MANCE / UP		QA (osed:	Date:	1000 C C C C C C C C C C C C C C C C C C
Work Order:	<u></u>	ž			DISPOSITION				AGAINST DE	PART	J MENT,	/PROCESS	
					Rework	7		Skid-tube	Crosstube			Water Jet	Engineering
Part No.					Scrap	1	I	Machining	Small Fab		Pro	d. Eng. Coor.	Quality
		· · · ·			Use-as-is] -	Therm	noforming	Finishing	R	ec/Sto	re/Packaging	Other 🔪
NCR No.					Work Order Update]		Large Fab	Composite	-		Supplier	
Root		T		Descri	ption of work order update	Ini	itial	Ac	tion	Si	n &		
Cause	Date	Step	Qty	1	or Non-conformance	Chie	f Eng	Desc	ription	d	ate	Verification	QC Inspector
Doc/Data					-								
Equip/Tooling]												
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	Bending	Bend		Grain		Ovalized		Ŗręss̞υτe̞/Forced
	Centre Not Concentric to O/S	BOM/Route		Hardware		Over/Under	tolerance	Temperature/Cure
	Cracks	Broken/Damaged		Inspection Incomplete	Ĺ	Part Incorred	:t	Weld
	Crushed/Crimped.	Burrs		Instructions Incomplete/Unclear		Part Lost/Mi	ssing	Wrong Stock Pulled
	Cuffs	Contamination		Maintenance		Part Moved		
	Heat Treat	Countersink		Mislabeled		Positioned V	Vrong	
	Inspection Strip in Tube	Cut Too Short		Misread		Power Loss/	Surge	Other
	Ripples in Bend	Drill Holes	L	Offset				
	Torque Waves in Extrusion	Drawing	L	Out of Calibration				
	Turning Sequence	Finish	L	Out of Sequence				
	Wave/Twist in Tube	Folio		Outside Dimensions				

FAULT CATEGORY

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Setup Other Process Supplier Training Unapproved

Work Order ID 99551 April 11, 2013 11:51:30 AM Item ID: D2965 Accept *N900040100* Setup Start Revision ID: Cap, 105 Skidtube Item Name: **Start Qty: 30.00 Start Date:** 4/11/13 Cust Item ID: Required Date: 4/26/13 Req'd Qty: 30.00 **Customer:** Reference: Run **Tooling:** Approvals: Process Plan: Date: Date: Stop SPC (Y/N): Date: Date: Sequence ID/ Reject Operation Set Up/ to all D Tool# Plan Reject Accept Description Work Center ID Code Qty Run Hours **Oty** Number Identify as per dwg & Stock Location: [?-OO] 190 0.00 *190* Packaging 0.00 Memo Packaging

200

QC21- Final Inspection - Work Order Release

0.00

200

Quality Control

QC

Memo

0.00

13-5-30

Stamp

Page 4

MF

												DQA:	Dat	e:	
NCR:	Yes	/ No				WORK ORDER NON-CONFORMANCE / UPDATE QA Closed: Date:									
								ı	30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		ŲΑ	Closea:	Dat	e:	
Work Ord	or:					DISPOSITION		AGAINST DEPARTMENT/PROCESS							
WORK OIG	ei. -	······································				Rework			Skid-tube	7		Water Jet	\neg	Engineering	
Part I	No					Scrap Use-as-is		Skid-tube Crosstube Machining Small Fab Thermoforming Finishing				Pro Rec/Sto	Quality		
NCR I	No.					Work Order Update		1	Large Fab	Composite		110	Supplier		
Root					Descri	ption of work order update	1	Initial	Ac	tion	S	ign &			
Cause		Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Desc	ription	<u> </u>	Date	Verification	1	QC Inspector
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Landi	ng G	ear				General		-			_				
	Ш	Bending				Bend	<u>L</u>	Grain			Ov	alized		\vdash	Pressure/Forced
		Centre No	ot Conce	ntric to	o/s	BOM/Route		Hardwa	re		Ov	er/Under	tolerance	\vdash	Temperature/Cure
		Cracks				Broken/Damaged	L	Inspecti	on Incomplete		Par	t Incorre	ct	-	Weld
		Crushed/	Crimped.			Burrs		Instruct	ions Incomplete/	'Unclear	Pa	t Lost/M	issing	LJ,	Wrong Stock Pulled
		Cuffs Contamination						Mainte	nance		Pa	t Moved			
Heat Treat Countersink					Mislabeled Positioned Wrong										
Inspection Strip in Tube Cut Too Short					Misread Power Loss/Surge Other				Other						
Ripples in Bend Drill Holes					Drill Holes		Offset								

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Folio

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Page 1

Picklist Print

April 11, 2013 11:51:30 AM

Work Order ID:

99551

Parent Item:

Comments:

D2965

Parent Item Name:

Cap, 105 Skidtube

IPP: A00.05.31New Issue EC

IPP Rev:Added Turning as per Rev B 06-12-15 JLM

Start Date: 4/11/13

Required Date: 4/26/13

Start Qty: 30.00

Required Qty: 30.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure		Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS7-1032-225		Purchased	No			170	Each	1,473.0000	2	1 60	76,		
INSERT											13 105	130	
	•			Location		Loc Qty	<u>Lo</u>	c Code					
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				r2001		45	, ,						i
				118	520	16							,
				122	290	29							
				ST280		263							
				122	290	263							
				ST281		1075							
				100	896	135							•
•				122	333	940							
D2965P		Purchased	No			170	Each	0.0000	1	30			
Cap												.,	

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NCR:	Yes	/	No
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												DQA:	Date	:
NCR:	Yes	/ No					WORK ORDER NON-C	O	NFORI	MANCE / UPDATE	Ο Δ	Gosed:	Date	
													- X	
Nork Ord	er.						DISPOSITION			AGAINST D	EPAR	TMENT/	PROCESS	
WOIK OIG	C1.						Rework	1		Skid-tube Crosstube	7		Water Jet	Engineering
Part	No.						Scrap			Machining Small Fab	1	Prod	d. Eng. Coor.	Quality
							Use-as-is		Thern	noforming Finishing] '	Rec/Stor	e/Packaging	Other
NCR	No.						Work Order Update]		Large Fab Composite	_		Supplier	
			<u>-</u> .	Γ	D		tion of word and an analogo		nitial	Action	C	ign &	·	
Root Cause		Date	Step	Qty	Des		otion of work order update or Non-conformance	1	initial ief Eng	Ī	1	Date	Verification	QC Inspector
oc/Data	-	Date	step	Qty			i Non-comormance	CII	iei Liig		_	Jace	Vermeation	Qo mspector
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Landi	ng C	Gear					General				_ 1			
		Bending					Bend		Grain			alized		Pressure/Forced
		Centre No	ot Concer	ntric to	o/s		BOM/Route		Hardwa	are		er/Under	tolerance	Temperature/Cure
		Cracks				L	Broken/Damaged		inspect	ion Incomplete	Par	t Incorre	t L	Weld
		Crushed/	Crimped.				Burrs		Instruct	tions Incomplete/Unclear	Par	t Lost/Mi	ssing	Wrong Stock Pulled
		Cuffs					Contamination		Mainte	enance	Par	t Moved		
		Heat Trea	it			Countersink			Mislabe	eled	Pos	sitioned V	Vrong	
	Inspection Strip in Tube Cut Too Short						Misrea	d L	Po\	wer Loss/	Surge	Other		
	Ripples in Bend Drill Holes						Offset							
	Torque Waves in Extrusion Drawing						Out of	Calibration						
	Turning Sequence Finish						Out of	Sequence						
	Wave/Twist in Tube Folio						Outside	e Dimensions						

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DRAWING NO. D2965

SHEET

1 OF 2

7.2

图

DART

AEROSPACE PORT HADLOCK,

USA,

NC.

06.

.11.01

CAP IIILE

00.02.24 06.11.01

NEW ADD

ISSUE J

CAP

 $\boldsymbol{\varpi}$ \rightarrow

06.12.12

RELEASE ASSE

R0.50 - R0.50
R1.80
0.188 0.125
2.25
-
- 0.400 - 0.370

1' TAPER

0.950 0.920

MASK

D2965 FINISH DETAIL	1.00 FROM END (NO PAINT)
W10, 8281	Ø0.297 (2 PLACES) — 0.400 0.370

INSTALL AELS-1032-225 INSERT (2 PLACES)

D2965 CAP

D2965 CASTING DETAIL

3.150 3.120

0.188 0.125

CAST ALUMINUM ALLOY A356.2 (F) MATERIAL:

0.405

45

R0.50 (TYP)

ø3.330 ø3.300

0.188 0.125

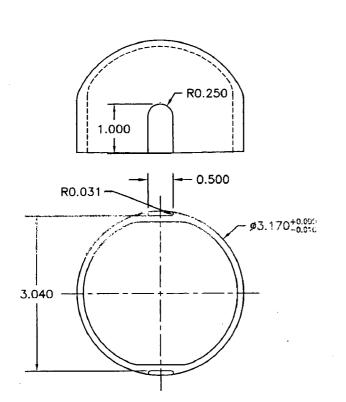
- 1) 2) 3) POWDER COAT PER QSI 005 4.3 TO MATCH REST OF SKIDTUBE FINISH: TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- ALL DIMENSIONS ARE INCHES

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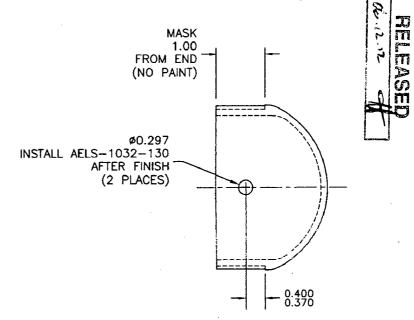
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D2965-3 CAP MACHINING DETAIL (MAKE FROM D2965 CAP)



D2965-3 FINISH DETAIL

D2965-3 CAP

MATERIAL: MAKE FROM D2965 CAP

2) FINISH:

POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED 3)

ALL DIMENSIONS ARE INCHES

CAP 1:2		06.11.01
TITLE SCALE		DATE
D2965 SHEET 2 OF 2	*	1111
DRAWING NO. REV. B	APPROVED	CHECKED
PORT HADLOCK, WA	177	817
DART AEROSPACE USA, INC.	DRAWN BY	DESIGN



Dart Aerospace Ltd. 1270 Aberdeen Street Hawkesbury, ON K6A 1K7

Tel: 613 632 9577 Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO19591

Purchase Order Date 4/16/13 PO Print Date 4/16/13

Page Number 1 of 1

Order From:

VC-ALU001

ALUMINUM FOUNDRY & PATTERN WORKS LTD. 2225 CHEMIN ST. FRANCOIS

DORVAL, OC H9P 1K3

CA

Contact Name

Vendor Phone

514 683 9777

Vendor Fax

514 683 0375

Vendor Account Nbr

Buyer

Requisition Nbr

Tax Resale Nbr Terms

Currency **FOB**

Chantal Lavoie

10127-2607

Net 30 CAD

Destination-Collect

Ship To:

DART AEROSPACE LTD

1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

CANADA



Line N	Revisi	2 totp		te/ Req Qty/ ole Unit of Measure	Ship Method	Unit Price	Extended Price
1 .	D2965P	Сар	4/30/ <i>Y</i> es	30.00 Each	FedEx PI collect	\$21.2000	\$636.00
			Special Inst: AS PER DW B99551	'G D2965 REV. B			
2	D2965P	Сар	4/30/13 Yes		FedEx PI collect	\$21.2000	\$424.00
			Special Inst: AS PER DW	G D2965 REV B			

B98923

PO Total:

\$1,060.00

NO







No substitution or deviation without consent. Certificate of Conformity or Material

Certification required **FYES**

Change Nbr:

Change Date: 4/16/13

Aluminum Foundry Ltd 2225 Chemin St. Francois Dorval, Québec H9P 1K3 Tel: (514) 683-9777 Fax: (514) 683-0375

email: info@foundryafpw.com

Packing Slip

Packing Slip No.:

34295

Shipped Date:

30 04 2013

Sold to:		Ship to:
	DART AEROSPACE 1270 ABERDEEN STREET HAWKSBURY, ONTARIO K6A 1K7 Tel. (613) 632-5200 Fax (613) 632-5246	DART AEROSPACE 1270 ABERDEEN STREET HAWKSBURY, ONTARIO K6A 1K7
Order No.	19591	
Shipped I	y:	The same of the sa
Tracking	No.:	

Z200080 Each D2965 CAP 38 Received by: Date:	Item No.	unit,	Description	- Quantity
Received by:	Z200080	Each	D2965 CAP	j8
Received by:				
			Possived by:	
Date:			Received by.	
			Date:	
Comment	Comment			<u> </u>

CERTIFICAT DE CONFORMITÉ CERTIFICATE OF COMPLIANCE

FONDERIE D'ALUMINIUM ET MODELERIE (1988) LTEE ALUMINUM FOUNDRY & PATTERN WORKS (1988) LTD

2225 CHEMIN ST. FRANCOIS, DORVAL, QC H9P-1k3 TEL:(514) 683-9777 FAX: (514) 683-0375

Expédié à Shipped -	DART AEROSPACE		A.F. & P.W.Série no./Serial no.				
ompped -	1270 Aberdeen Street		Packing Date: <u>30/04/2013</u> Slip No. <u>34295</u>				
	Hawksbury, ON, K6A		e No. Commande ur order No.	19591			
documents e This is to cer	r certifié que le materiel liste ci-des en evidence des rapports et certific tify that the material listed below is the tests or release certificates fror	ates di détaillante so s according to your si	nt en filiere dans : pecifications on al	notre burea pove P.O. a	au.		
Quantite Quantity	Description	Notre No. Our No.	Specification	s	Note d'autorisation Incoming Release note		
58	D 2965 CAP	Z200080	A356.2		ingot#C625-0826 B# 1311301		
					·		
Analyse Analysis (as i (Si) (Fe) (Cu) (Mn) (Mg) (Zn) (Ti)	n ingot) 6.9% (Ai) balance 0.11% <0.01% <0.01% 0.39% <0.01% 0.11%	·		<u> </u>			
Donne Yield :	Résistence a la tension : Tensile Strength :		Allongement P.S.I. Elongat	par pouce o	carré : %		
			u nom de on behalf of :				
		FONDEF ALUMINU	RIE D'ALUMINIUI	M ET MOD ATTERN	ELERIE (1988) LTEE WORKS (1988) LTD		
Coc-100		Dept/De Par/Per					